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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re Application of:

Stanley Pietrowicz
Application No. 09/626,437
Filed: July 27, 2000
Art Unit: 2143
Examiner: Arrienne M. Lezak

Title: Method And System For Transporting Generic Data Messages Over The Public Switched Telephone Network To Customer Premises Equipment Without Establishing A Call

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## BRIEF ON APPEAL BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

This appeal arises from the Examiner's Final Rejection dated August 11, 2004, of claims 1-7, 9, 10, 12, 15, 17-20, 25-27, 29-31, 35-47, 49 and 50.

(i) Real Party in Interest

The real party in interest is Telcordia Technologies, Inc., the assignee of the invention according to an assignment dated August 21, 2000 and recorded at reel no. 011187, frame no. 0697.

(ii) Related Appeals and Interferences

To the best of knowledge of the legal representative of assignee, Telcordia Technologies, Inc., there are no other appeals or interferences which will directly affect or be directly affected or have a bearing on the Board's decision in the pending appeal.

(iii) Status of Claims

In the present Application Serial No. 09/626,437claims claims 1-7, 9, 10, 12, 15, 17-20, 25-27, 29-31, 35-47, 49 and 50 are at issue. Originally, claims 1-36 were filed with the application on July 27, 2000. A preliminary amendment was filed September 26, 2001 in which claims 1-7, 9, 10, 12, 15, 17-20, 25, 27, 29-31, 35 and 36 were amended. Claims 11, 13, 14, 16, 21-24, 28 and 32-34 were canceled. Claim 26 remained unchanged. Claims 37-50 were added.

In the Office Action dated October 27, 2003, the Examiner rejected claims 1, 2, 12, 17, 18, 25, 29, 37, 38, 40, 42, 44 and 45 under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 5,247,571 to Kay et al. Additionally, the Examiner rejected claims 3-7, 9, 10, 15, 19, 20, 26, 31, 35, 36, 37, 38, and 39 under 35 U.S.C. 103(a) as being obvious in view of Kay et al. further in view of United States Patent No. United States Patent No. 6,385,647 to Willis et al. Lastly, in the same office action the Examiner rejected claims 8, 27, 30, 41, 43 and 46 under 35 U.S.C. 103(a) as being obvious in view Kay et al.

By an Amendment dated March 29, 2004, claims 15, 27, 29, 31, 38, 39, 40, 41, 42, 43 and 45 were amended into its current form and claims 8 and 44 were canceled. Due to some confusion with claim numbering, a Notice of Non-Compliant Amendment was received on April 2, 2004 and a compliant amendment was filed April 16, 2004. In these responses, appellant amended claim 15 to add a missing period, amended claims 27, 31, and 42 to remove the word "generic", which had no antecedent basis in the claims, and amended claims 45 and 47 to recite "[t]he node" rather than "[t]he system" in accordance with each claim's parent claim. Additionally, claims 29 and 46 were amended to clarify that the "central server" and the "application" recited therein, respectively, interface the PSTN and are therefore not elements of the PSTN. Furthermore, appellant amended claim 44 to clarify that the node recited therein is a "PSTN based node" and that this node includes a system for delivering data "to subscriber devices." Lastly, appellant amended claim 49 to be an independent claim that includes the limitations of claim 48 and correspondingly, canceled claim 48.

In a Final Office Action of August 11, 2004 the Examiner rejected pending claims 1-7, 9, 10, 12, 15, 17-20, 25-27, 29-31, 35-47, 49 and 50. Claims 1, 2, 12, 17, 18, 25, 29, 37, 40, 42, 44, 46, 48 and 49 were rejected under 35 U.S.C. 102(b) as being anticipated by Kay et al. Claims 3-7, 9, 10, 15, 19, 20, 26, 31, 35, 36, 38, 39, 41 and 43 were rejected under 35 U.S.C. 103(a) as being obvious over Kay et al. in view of Willis. It was the Examiner's position that "Appellant has not yet submitted claims drawn to limitations, which define the operation and apparatus of Appellant's disclosed invention in a manner that distinguishes over the prior art." (Office Action dated August 11, 2004, p. 11).

The Examiner and the appellant have a fundamental disagreement over the applicability of the Kay et al. and Willis references to the claims at issue. Appellant believes the claims as amended do contain subject matter that is novel and non-obvious in view of these cited references.

(iv) Status of Amendment

No amendments have been made or presented with respect to claims 1-7, 9, 10, 12, 15, 17-20, 25-27, 29-31, 35-47, 49 and 50 after final rejection.

(v) Summary of Claimed Subject Matter

The present invention is a system and method for transporting generic data messages over the public switched telephone network (PSTN) from a service application connected to the PSTN through an originating node to subscriber device or customer premises equipment (CPE) connected to the PSTN through a terminating node wherein the PSTN has no embedded knowledge of the service application.

In the method a request message is created at the service application wherein the request message comprises the data and data delivery instructions for delivery of the message to the subscriber device. (Specification, p.6, lines 31-32 and p. 9, lines 25-29). The request message is transported from the central server at which the service application is operating to an originating node or SPCS on the PSTN over an originating node-service application interface. This originating node-service application interface can be either a non-call associated ISDN interface or SMDI interface. (Specification, p. 6, line 34 – p.7, line 1; p. 9, lines 29-31; and p. 26, line 18 to p. 33, line 22). The request message is transported from the originating node to the terminating node via a Transaction Capabilities Application Part (TCAP) message using the CCS/SS7 network. (Specification, p. 7 lines 1-4; p. 10, line 1; and p. 33, line 25 to p. 34, line 4). At the terminating node the data is transported to the subscriber device over the terminating node – subscriber device interface based on the data delivery instructions contained in the data. (Specification, p. 7, lines 7-11 and p. 10 lines 2-4). Additionally, at the terminating node a response message can be defined wherein the response message comprises status data indicating the status of the delivery of the data to the subscriber device and routing the response message from the terminating node to the service application. (Specification, p. 7, lines 12-15; p. 10, lines 4-7; and p. 38, lines 25 -36).

In the system a central server defines a generic request message that includes service application data from a service application and the information needed to deliver the application data to the CPE devices. (Specification, p. 8, line 31 - p. 9, line 2; FIGS. 4 and 5). The central server sends this information to an originating stored programmed control system (SPCS) that contains a generic data message transport (GDMT) subsystem which formats the service application data and delivery information into a TCAP message. (Specification, p. 9, lines 29-32; FIG.5; p. 10, line 11 to p. 19, line 1; and p. 35, line 2 to p. 36, line 16). The TCAP message is then transported over the existing CCS/SS7 network in the PSTN to a terminating SPCS (Specification, p. 37, line 2 to p. 38, line 17) where the application data and delivery instructions are removed from the TCAP encapsulation by a GDMT subsystem thereby enabling delivery of the application data based on the delivery instructions. (Specification, p. 10, lines 2-4, FIG. 5, p 21, lines 4-14).

An additional feature of the method and system is Local Number portability (LNP) in which the originating node uses an LNP database to resolve issues regarding number portability prior to forwarding the data and deliver instructions via the TCAP message. (Specification, p. 9, lines 36 to p. 10, line 1 and p. 38, lines 18-24).

Additional claims add the multicasting functionality in which a list of (Specification, p. 7, lines 16-24 and p. 25, line 19 to p. 26, line 15). The response message system enables the terminating node to send a message back to the central server identifying any subscriber devices no longer served by the terminating node. (Specification, p. 7, lines 24-29 and p. 25, line 12 to p. 26, line 15).

In an alternative embodiment the central server interfaces with the originating node of the PSTN through a CCS/SS7 interface rather than the SMDI/ISDN interface described above. (Specification, lines 12-33).

(vi) Grounds of Rejection to be Reviewed on Appeal

In the Final Office Action dated August 11, 2004, claims 1, 2, 12, 17, 18, 25, 29, 37, 40, 42, 44, 46, 48 and 49 were rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 5,247,571 to Kay et al. ("Kay et al."). In that Office Action the Examiner stated that as to the rejected claims "Kay discloses a method for delivering data from a service application to a subscriber device by means of a Public Switched Telephone Network (PSTN) and packet switch, (Col. 24, lines 51-55), comprising an originating node and a terminating node, wherein the service application interfaces the PSTN through the originating node and the subscriber device interfaces the PSTN through the terminating node and wherein the PSTN has no embedded knowledge of the service application (Kay: Abstract; Fig. 2; and Col. 23, lines 34-65 and Col. 24, lines 1-64), said method comprising the steps of creating a request message at the service application wherein the request message comprises the generic data format, the data and the data delivery instructions (whereby the delivery instructions specify to the node a list of possible subscriber devices – via address range or NPA-NXX available on node – served by the node that should receive the data), (Kay: Abstract, Col. 11, lines 5-9; and Col. 24, lines 13-23); transporting the request message from the central server to the PSTN over the originating node-service application interface; routing the request message from the originating node to the terminating node via a Transaction Capabilities Application Part (TCAP) message without establishing a call, (wherein the service application resided outside the PSTN); transporting the data from the terminating node to the subscriber device over the terminating node-subscriber device interface based on the data delivery instructions (Kay: Col 12, lines 12-17); defining a response message at the terminating node wherein the response message comprises status data indicating the status of the delivery of the data to the subscriber device or message retrieval request; notification via Simplified Message Desk Interface autocommand on response; plurality of devices; and routing the response message from the terminating node to the service application (Kay: Col. 20, lines 60-68; Col. 21, lines 1-19; and Col. 24, lines 6-11)." (Office Action dated August 11, 2004, pp. 2-3).

Claims 3-7, 9, 10, 15, 19, 20, 26, 31, 35, 36, 38, 39, 41, 43 and 50 were rejected by the Examiner as being unpatentable under 35 U.S.C. § 103(a) as obvious over Kay et al. in view of United States Patent No. 6,385,647 to Willis ("Willis").

More specifically, with regard to claims 3-6 the Examiner found that "[t]he use of specific type interfaces within the Kay network would have been obvious to one of ordinary skill in this art at the time of invention by appellant as the very nature of the prior art requires synonymous functionalities." (Office Action dated August 11, 2004, p. 4).

Claim 7 was rejected based on "further consideration" of Kay. The Examiner admitted that "Kay does not specifically disclose or describe the method of delivering data wherein the step of routing the request message is based on a PSTN address of the subscriber device and includes the steps of: obtaining a Local Routing Number if the address has been ported; and routing the request message based upon the Local Routing Number if the address has been ported." The Examiner states that "[t]he motivation to utilize the PSTN routing means is found within May ('571) as part of the 'virtually unlimited selection of routing control means', (Kay: col. 18, lines 27-31). (Office Action dated August 11, 2004, p. 5).

Claims 9 and 19, 10 and 20 and 26 and 36 as well as claims 31, 35 and 41 were rejected based on a combination of Kay and Willis et al. The Willis reference was used by the Examiner to overcome numerous deficiencies in Kay including: (1) the lack of disclosure of a method for delivering data wherein transporting the data to the subscriber device occurs regardless of whether the subscriber device is off-hook or on-hook (claims 9 and 19); (2) the lack of disclosure of a method for transporting data wherein the subscriber device does not require subscriber interaction (claims 10 and 20); (3) the lack of disclosure in Kay of a community notification service for broadcasting community notification information to the plurality of subscriber devices (claim 26) or a web server which "pushes" data to a multi-functional server (claim 36); and (4) the lack of a disclosure of multicast, reception triggering connection or Unified Messaging Services (claims 31, 35 and 41). The Examiner finds all of this in Willis stating, *inter alia*, that "the enumerated option of 'push' technology, (Willis: Col. 3, lines 35-45) **implies** that knowledge that the receiver is on-hook or off-hook is obviated" (Office Action dated August 11, 2004, p. 6, emphasis added) and "[t]he motivation to combine the 'push' technology from Willis into the Kay network is found within Kay as an obvious form of information dissemination in consideration of the functionalities and means described therein." (Office Action dated August 11, 2004, p. 6).

With regard to claims 15 the Examiner states that "Kay ('571) does not specifically disclose or describe a method for delivering data wherein the step of transporting the data to the subscriber device further includes the step of over-riding vertical services defied [sic] for the terminating node-subscriber device interface based on the data delivery instructions. Kay, however, discloses the use of packet technology, (as noted above), which allows for destination specification." (Office Action dated August 11, 2004, p. 7). The Examiner then refers to modems and Willis, Fig. 3 and Col. 11, lines 14-23 as overcoming this deficiency.

With regard to claims 43, the Examiner first identifies a deficiency in Kay as "not specifically disclos[ing] or describ[ing] the functionality of delivering data from the service-profiler to the wireless device via the wireless network. The Examiner cites the satellite network of Willis, Abstract and Fig. 1 as overcoming this deficiency. (Office Action dated August 11, 2004, p. 8).

With regard to claims 38 and 39, the Examiner first identifies the deficiency in Kay as being the lack of a disclosure of "the ability for the user of the subscriber device to establish a voice-band connection as a result of receiving data and to retrieve information over the voice-band connection." The Examiner cites Willis as overcoming this deficiency. The Examiner states that "Kay indicates that any communication device may be used as long as it is compatible with the line, (Kay: Col. 11, lines 5-9). The line in this sense is the "line of communication" between objects on the network and as such would need to be capable of information dissemination regardless whether the connection is physical, (voice-band) or virtual." (Office Action dated August 11, 2004, pp. 8- 9)

With regard to claims 8, 27, 30, 45, 47 and 50, the Examiner rejected each of these claims as being obvious in view of Kay standing alone. Claim 8 was regarded by the Examiner as "an **inherent** possibility within basic network design. The motivation to incorporate this type of network design into the Kay network is found within Kay's requirement for a 'wide Centrex communcication network', (Kay: Col 23, lines 34-56 and Col. 24, lines 1-64)." (Office Action dated August 11, 2004, p. 9, emphasis added). There is somewhat confused here because claim 8 was canceled.

With regard to claims 27, 30, 45, 47 and 50, the Examiner noted a deficiency of Kay as not disclosing "the creation of a response message comprising the individual subscriber devices to which the node could not deliver data as the subscriber devices had been ported; and delivery of the plurality of request messages to nodes serving the ported subscriber devices." (Office Action dated August 11, 2004, p. 10). The Examiner stated that "[t]he motivation to incorporate a 'failed' delivery would be necessary, expected and inherent in such a two-way messaging network system." (Office Action dated August 11, 2004, p. 10).

The issues presented by this appeal are:

(a) whether the Kay et al. reference anticipates one or more of claims 1, 2, 12, 17, 18, 25, 29, 37, 40, 42, 44, 46, 48, and 49.

(b) whether the combination of Kay et al. and Willis would make claims 3-7, 9, 10, 15, 19, 20, 26, 31, 35, 36, 38, 39, 41 and 43 obvious to one skilled in the art.

(c) whether claims 27, 30, 45, 47 and 50 are obvious in view of Kay alone in view of certain "inherent" features the Examiner has identified therein.

(vii) Argument

Claims 1, 2, 12, 17, 18, 25, 29, 37, 40, 42, 44, 46, 48, and 49 have been rejected as being anticipated by Kay. Claims 3-7, 9, 10, 15, 19, 20, 26, 31, 35, 36, 38, 39, 41, 43 and 50 have been rejected as being obvious to one skilled in the art in view of Kay and Willis or Kay alone. However, various claim groups contain different combinations of novel steps or apparatus.

Claims 1-7 should stand or fall together as relating to a novel method of using TCAP messaging to deliver data and data delivery instructions from a service application to a subscriber device and then routing a response message back to the service application. Claim 9, 10, 12 and 15 should stand or fall each on their own as relating to additional novel steps or limitations.

Claims 29, 42, 44, 46 and 49 should stand or fall and together as being directed toward a novel method, system or node in which the data is delivered to subscriber devices from a service application sending a request message where the PSTN based nodes have no knowledge of the data format. Claims 38, 39 and 40 depend from claim 29 and should stand or fall with claim 29. Claim 45 adds the response message feature to claim 44 and should stand or fall on its own. Claim 47 depends from claim 46 and should stand or fall on its own.

Claims 31 should stand or fall on its own as relating to a method of broadcasting data to a plurality of subscribers wherein the data is delivered to subscriber devices from a service application sending a request message where the PSTN based nodes have no knowledge of the data format. Claims 17, 18, 19, 20, 25-26, 27 and 37 depend from claim 31. Claims 17, 18 and 37 should stand or fall with claim 31. Claims 19, 20, 25-26 and 27 should stand or fall each on their own.

Claim 35 should stand or fall on its own as relating to enhanced delivery of Unified Messaging Services data from a multi-functional server to a subscriber over the PSTN without establishing a call. Claims 41 and 42 depend from claim 35 and should stand or fall with claim 35.

Claim 43 should stand or fall on its own as relating to delivering data to wireless subscriber devices from a service application sending a request message where the PSTN based nodes have no knowledge of the data format

Claims 27, 30, 45, 47 and 50 should stand or fall together as being directed to the use of a response message regarding delivery of data in accordance with the method or system of the respective independent claims.

I. The Examiner erred in rejecting independent claims 1, 29, 42, 44, 46 and 49 as being anticipated by Kay et al. Kay teaches a method for implementing an area wide Centrex service using an AIN (Advanced Intelligent Network) architecture. The AIN architecture comprises a plurality of central office switches interconnected through trunk circuits, which are used to carry telephone calls between the switches and terminal equipment (such as phones, modems, faxes, etc.). The architecture also comprises an ISCP and a CCIS signaling network, which network interconnects the switches between each other and to the ISCP. (Kay, column 10 line 27 to column 11, line 9).

Under AIN, when a calling station makes a service request (i.e., goes off-hook) and enters a called number, the originating switch begins by communicating through the CCIS network with the terminating switch that serves the called station, inquiring from this switch whether the call can be completed to the called station. If the call can be completed, the originating and terminating switches complete the call setup by establishing a telephone connection between the calling and called stations using the trunks circuits that interconnect the switches. (Kay, Figure 3; column 13, lines 16-32). In addition to basic call setup, AIN also allows switches to be programmed to recognize different service triggers for a telephone line. When a trigger applies to a telephone line, the switch communicates with the ISCP to obtain additional call processing information and then uses this information to proceed with the call setup. (Kay, column 3, lines 28-35; column 11, line 20 to column 12, line 32).

In accordance with Kay's teaching for implementing a Centrex, a switch is programmed to recognize that certain of its local lines have an associated Centrex service (i.e., an AIN trigger is associated with the line). When an originating switch detects a service request (i.e., detects an off-hook) on one of these lines, the switch receives the dialed digits from the calling station and then suspends the call. The switch then formulates a TCAP request message for the ISCP requesting that the ISCP provide instructions on how to process the call, and then sends this request message through the CCIS network to the ISCP. Upon receiving the message, the ISCP uses the calling number and/or dialed digits to access a local database in order to obtain call processing data that the originating switch needs to complete the call. The ISCP places the call processing data into a TCAP response message and sends this message back to the originating switch through the CCIS network. The originating switch in turn uses the call processing data to determine the terminating switch that serves the called station and then communicates with this switch via the CCIS network to determine if the call can be completed, as described above. If the call can be completed, the originating and

terminating switches complete call setup by establishing a telephone connection between the calling and called stations using the trunks circuits that interconnect the switches. (Kay, Figure 4; column 13 line 33 to column 14, line 16).

A. Argument Regarding Claim 1

Kay's teachings are divergent from claim 1 and fail to teach or suggest the steps of claim 1. Most significantly, claim 1 recites that data is routed from a service application to a subscriber device via TCAP messaging. Importantly, both the service application and subscriber device of claim 1 interface the PSTN network through originating and terminating nodes and are therefore not part of the PSTN network. The only comparable elements in Kay's teachings to the service application and subscriber device of claim 1 are the calling station interfacing an originating switch and the called station interfacing a terminating switch. However, in accordance with Kay, data never moves between calling and called stations using TCAP messaging. Kay only teaches that TCAP messaging is used for communications between PSTN components, or in other words, is used between the originating and terminating switches in order to establish trunk circuits through which the calling and called stations can communicate and is used between an originating switch and the lSCP in order for the originating switch to obtain call processing data. All data sent between the calling and called stations is through the trunk circuits.

In addition, claim 1 recites that the service application creates a request message that includes both "data and data delivery instructions" and that a terminating node receives this message via the TCAP messaging and uses the enclosed instructions to transport the data to the subscriber device. Appellant agrees that Kay teaches that a calling station will send a "service request" to an originating switch; however, this request as taught by Kay is simply an off-hook indication and is not a message including both data and data delivery instructions as claim 1 recites. In addition, although the calling station also communicates called station dialed digits to the originating switch and that the originating switch may send these digits via TCAP messaging to a terminating switch, Kay fails to teach or suggest that these digits are a message including both data and data delivery instructions or that these digits are ever conveyed to a called station.

Furthermore, although Kay teaches that once a call is established, originating/terminating switches convey data through trunk circuits between calling and called stations, Kay fails to teach or suggest that the switches are examining these communications and as such, Kay fails to teach or suggest that the switches are delivering this data according to instructions that are accompanying the data.

In addition, appellant agrees that in response to detecting an off-hook from a calling station the originating switch will contact the ISCP to obtain call processing data and that the switch will subsequently use this data to establish a trunk circuit. While one can possibly view this call processing data from the lSCP as data delivery instructions, these data delivery instructions are not created by the calling station, are not part of a single request message that also includes data from the calling station, and are not conveyed with data to a terminating switch and subsequently used by this terminating switch to deliver data to a called station, as claim 1 recites. Accordingly, Kay fails to teach or suggest claim 1.

The sections of Kay cited by the Examiner do not teach or suggest the invention of claim 1. The Examiner cites Col 24, lines 51-55 as disclosing a method for delivering data

from a service application to a subscriber device by means of a Public Switched Telephone Network (PSTN) and packet switch. This does not teach or suggest the use of TCAP messaging over the CCIS/SS7 portion of the PSTN for delivery of data and data delivery instructions. Furthermore, this novel teaching of the present invention is not taught or suggested by the Abstract of Kay, col. 11, lines 5-9 or col. 24, lines 13-23. These sections discuss the use of modems and a two-way signaling system connecting the central office switches to the ISCP. They do not teach the use of TCAP messages for delivery of data and data delivery instructions from a service application connected to an originating node of the PSTN to one or more devices connected to a terminating node of the PSTN. The ISCP is not a user device but is a database and software used in AIN networks.

Likewise the above arguments apply to independent claims 29, 44, 46 and 49 which recite defining a request message at the central server wherein the request message comprises data and data delivery instructions instructing the node on how to deliver the data to the subscriber device where the originating mode of the PSTN has no knowledge of the data format.

B. Argument Regarding Claim 29

Claim 29 recites that in delivering a request message from a central server to a subscriber device, the central server transports the message to a PSTN based node "without establishing a call" and that the PSTN based node then delivers the data to the subscriber device. Because the central server and subscriber device of claim 29 interface the PSTN, Kay's calling and called stations are the only comparable elements to the central server and subscriber device. However, as described above, Kay only teaches a calling station sending data to a called station through trunk circuits, which indicates the transfer is the result of establishing a call, contrary to claim 29.

In addition, Kay fails to teach or suggest that its calling station creates a request message that includes both "data and data delivery instructions," that such a message is ever transported from a calling station to a PSTN based node, or that a PSTN based node delivers data to a called station based on instructions received from a calling station, contrary to claim 29. Again, Kay only teaches a calling station sending to a switch an off-hook indication and called station dialed digits. As indicated, neither an off-hook indication nor dialed digits is a message including both data and data delivery instructions and neither is ever conveyed to called station, as claim 29 recites. Similarly, while the ISCP will send call processing data to an originating switch (i.e., a PSTN based node), this call processing data does not originate from a calling station and is not associated with data from a calling station. Accordingly, Kay fails to teach or suggest amended claim 29.

C. Argument Regarding Claim 44

Turning to amended claim 44, it recites a PSTN based node with a data delivery system that comprises "means for receiving a request message [that includes both] data and data delivery instructions and means for delivering the data to one or more subscriber devices according to the ... instructions." Again, Kay teaches that an originating switch has means for detecting a calling station going off-hook; however, this off-hook is not a request message that includes both data and data delivery instructions as claim 44 recites. Similarly, Kay teaches that an originating switch has means for subsequently receiving dialed digits from a calling station. Assuming these dialed digits are "data", Kay fails to teach or suggest that data delivery instructions accompany this data or that this data is ever

delivered to a subscriber device. Kay only teaches that the originating switch conveys these digits/data to the ISCP or to a terminating switch (for the purpose of establishing a trunk circuit). Similarly, assuming the dialed digits are "data delivery instructions", Kay fails to teach or suggest that data accompanies these instructions. In addition, while the originating/terminating switches of Kay convey data through trunk circuits between calling and called stations, Kay fails to teach or suggest that the switches are examining these communications and as such, Kay fails to teach or suggest that the switches are delivering this data according to instructions that are accompanying the data.

It is further noted that while Kay teaches the originating switch receives call processing data from the ISCP and that one can view this call processing data as "data delivery instructions," these data delivery instructions are not part of a single request message that also includes data that the originating switch subsequently delivers to a calling/called station based on the instructions, as claim 44 recites. Kay only teaches that the switch uses the call processing data to communicate with a terminating switch to establish a trunk circuit. Note further that in some cases, Kay indicates that as part of call processing, the ISCP may instruct an originating switch to further communicate with a calling station by issuing a prompt, such as synthesized speech or tone. (Kay, column 14, lines 26-48, column 21; lines 20-32). Importantly, these communications are still divergent from claim 44. Significantly, while one can possibly view these instructions from the ISCP to the originating switch as "data delivery instructions", Kay fails to teach or suggest that the switch also receives from the ISCP the data (i.e., the prompt) to be communicated to the calling station and as important, fails to teach or suggest that the switch has no "knowledge of the data format" communicated to the calling station, as claim 44 recites. Accordingly, Kay fails to teach or suggest amended claim 44.

D. Argument Regarding Claim 46

Turning to amended claim 46, it recites "a PSTN based node comprising means for receiving data from an application interfacing the PSTN [and] means for distinguishing the data as a type comprising service and implementation information wherein the implementation information describes how to deliver the service information." Again, the only elements of Kay comparable to the PSTN based node and application of amended claim 46 are Kay's originating switch and calling station, respectively. However, as described above, Kay never teaches that the originating switch receives from the calling station data that comprises both service information and implementation information wherein the implementation information describes how to deliver the service information.

Amended claim 46 further recites that the PSTN based node comprises "means for transmitting the data over a packet interface if the data is of the type comprising service and implementation information." While Kay teaches that the originating switch will deliver dialed digits from a calling station over a packet network to the ISCP, these teachings are still divergent from claim 46 because Kay teaches that this determination to send the dialed digits is based on automatic AIN triggers at the switch. Significantly, these triggers do not actuate as a result of receiving data of the type comprising service and implementation information from the calling station, as claim 46 recites. Similarly, while Kay teaches that the originating switch will deliver dialed digits from a calling station over a packet network to a terminating switch, the determination to send these digits is based on normal call processing procedures at the switch and is not the result of receiving data of the type comprising service and implementation information from the calling station. Accordingly, Kay fails to teach or suggest amended claim 46.

E. Argument Regarding Claim 49

Amended claim 49 recites a method executed by a service application for sending data through a PSTN "wherein the service application resides outside the PSTN." The method comprises the steps of creating a message that comprises both the data and "customized delivery options for instructing the PSTN on how to deliver the data," and "transmitting the message without establishing a call." Kay fails to teach or suggest amended claim 49 for several reasons. First, as described above, Kay teaches that all data sent through the PSTN by a device residing outside the PSTN, such as a calling station, occurs through trunk circuits, or in other words, is the result of establishing a call, contrary to claim 49. Second, Kay fails to teach or suggest that a device, such as calling station, creates a message that includes both data and customized delivery options and that these delivery options are for instructing the PSTN on how to deliver the data. Similarly, while Kay teaches that the ISCP will send call processing data to an originating switch without establishing a call and this call processing data can be viewed as customized delivery options, the ISCP is not a service application that resides outside the PSTN, as claim 49 recites. Accordingly, Kay fails to teach or suggest amended claim 49.

It is difficult for the appellant to determine the exact basis for the rejection of dependent claims 2, 12, 17, 18, 25, 37, 40 and 42. Claim 2 recites the use of the Simplified Message Desk Interface for the interface between the originating node and the service application. There is no corresponding disclosure in Kay. Claim 12 recites the use of a packet switch for the communication of the request and response messages between the originating node and the service application. There is no corresponding disclosure in Kay. Claims 17, 18 and 25 are directed toward the multicasting of the message data to multiple recipients in a range of addresses. There is no corresponding disclosure of this in Kay. Claim 40 is directed to an additional step of claim 29 wherein the user of the subscriber device establishes a connection as a result of receiving data from the terminating node. Claim 42 is similar with respect to claim 35. Neither are taught or suggested by Kay.

II. The Examiner has erred in using the combination of Kay et al. and Willis to find that claims 3-7, 9, 10, 15, 19, 20, 26, 31, 35, 36, 38, 39, 41 and 43 would have been obvious to one skilled in the art.

Willis is directed at efficiently multicasting data from a source to multiple destinations. Willis notes that multicasting typically occurs through communications networks that comprise the Internet and telephony systems. The problem, however, is that the bandwidth requirements of the multicasted data often exceed the capabilities of these communications networks, making the multicast inefficient. Willis overcomes this problem through the use of a satellite transmission network, which provides for more efficient transmission of high bandwidth data. In particular, a source that needs to multicast data first sends the data to a source computer. This source computer analyzes the data for its size and the distance it needs to travel to the destinations. Based on this analysis, the source computer either continues to route the data through the traditional communications networks (i.e., Internet and telephony systems) or alternatively, through a satellite communications network. In either case, the data is routed over one of these networks to a receiving facility, which then routes the data to the intended destinations. (Willis, column 2, line 17 to column 4, line 35; column 9, line 58 to column 10, line 19; column 20, line 6 to column 22, line 37).

A. Argument Regarding Claim 31

Turning first to independent claims 31, 35, and 43. With respect to independent claim 31, the Examiner indicates that Kay teaches all steps except for multicasting, which is taught by Willis. Appellant respectfully disagrees. Beginning with Kay, the only comparable elements to the central server and subscriber devices of claim 31 are Kay's calling and called stations because the central server and subscriber devices interface the PSTN. Significantly, claim 31 recites that in broadcasting data from the central server to subscriber devices, the central server routes the data as part of a request message to a PSTN based node "without establishing a call" and the PSTN based node then delivers the data to the subscriber devices according to delivery instructions in the message. However, contrary to claim 31 and as described above, Kay teaches that all data sent between the calling and called stations occurs through trunk circuits, or in other words, is the result of establishing a call.

In addition, Kay fails to teach or suggest that a calling station defines a request message that includes both data delivery instructions and data and that such a message is routed from a calling station to a PSTN based node, as claim 31 recites. Again, a calling station will send an off-hook and dialed digits to an originating switch, but this off-hook and these dialed digits are not messages that comprise both data and delivery instructions and more importantly, are not messages that comprise delivery instructions that specify a "list of possible subscriber devices" that are served by the node and that should receive the data, as claim 31 recites. Similarly, while the ISCP will send call processing data to an originating switch without establishing a call and this call processing data can be viewed as customized delivery options, the ISCP is a PSTN-based component and is therefore not equivalent to the central server of claim 31, which central server only interfaces the PSTN.

Willis also fails to teach or suggest the steps of claim 31 alone or in combination with Kay. Most significantly, Willis fails to teach or suggest that elements external to a PSTN network communicate through the PSTN without establishing a call. In addition, while appellant agrees that Willis describes elements that perform multicasting/broadcasting, Willis fails to teach or suggest that any of the described elements, including the source computer and receiving facility, are a *PSTN-based node* that multicasts data, or in other words, are *PSTN-based nodes* that deliver data to one or more subscriber devices based on delivery instructions.

Appellant also disagrees with the Examiner that there is motivation to combine multicasting as taught by Willis with the teachings of Kay. The Examiner makes particular reference to Kay's ISCP and the ISCP's associated database and indicates that the "motivation to combine the 'push' technology from Willis into the Kay network is found within Kay as an obvious form of information dissemination in consideration of the functionalities and means described therein." The only references Kay makes to the ISCP and the ISCP's database are with respect to switches querying the ISCP for call processing information based on a specific call initiated by a subscriber. It is unclear from Kay's teachings what benefit or functionality would be gained from having the ISCP spontaneously send call processing information to switches, whether it be uni-cast, multicast, or broadcast. Accordingly, Kay and Willis, alone and in combination, fail to teach or suggest claim 31.

B. Argument Regarding Claim 35

Turning to claim 35, the Examiner indicates that Kay teaches all steps except for the incorporation of unified messaging, which is taught by Willis. Claim 35 is novel and non-obvious in view of Kay and Willis for the same reasons as set forth above for claim 31. Again, the "multi-functional server" and "subscriber" of claim 35 interface the PSTN and both Kay and Willis fail to teach or suggest that elements interfacing the PSTN communicate through the PSTN "without establishing a call," as claim 35 recites. Similarly, Kay and Willis fail to teach or suggest an element that interfaces the PSTN (such as a calling station) creating a request message that includes both "data concerning subscriber messages" and delivery instructions "instructing [a] switch on how to deliver such data to a subscriber device" or that such a message is delivered to a PSTN based node from an element that interfaces the PSTN.

Perhaps more importantly however, it is unclear why the use of multicasting as taught by Willis and as suggested by the Examiner would motive one to interface to a PSTN based system a "multi-functional server that receives subscriber messages from the PSTN and Internet" and that then uses the PSTN based system to deliver data concerning these subscriber messages to a subscriber without establishing a call. In particular, neither Kay nor Willis discusses Unified Messaging Services. In addition, because Kay is directed at using AIN mechanisms to trigger call setup and then establishing calls through trunk circuits, the obvious combination of Unified Messaging Services and Kay would be the reception of subscriber messages triggering Kay's system to establish a call and then delivering the messages to a subscriber through trunk circuits, which is not appellant's invention as recited by claim 35. Accordingly, Kay and Willis, alone and in combination, fail to teach or suggest claim 35.

C. Argument Regarding Claim 43

Turning to amended claim 43, the Examiner indicates that Kay teaches all steps except for the step of delivering the data from the service profiler to the wireless device via the wireless network, which is taught by Willis. Again, appellant respectfully disagrees for the same reasons as set forth above for claims 31 and 35. Again, the central server and service profiler of claim 43 are external to the PSTN and both Kay and Willis fail to teach or suggest that elements external to the PSTN communicate through the PSTN "without establishing a call," as claim 43 recites. Similarly, Kay and Willis fail to teach or suggest an element that interfaces the PSTN creating a request message that includes both data and data delivery instructions that are used by a switch to deliver the data or that such a message is delivered to a PSTN based node from an element that interfaces the PSTN. Accordingly, Kay and Willis, alone and in combination, fail to teach or suggest claim 43.

D. Argument Regarding Dependent Claims

Now returning to dependent claims 3-7, 9, 10, 15, 19, 20, 26, 36, 38 and 39. More specifically, with regard to claims 3-6 the Examiner found that "[t]he use of specific type interfaces within the Kay network would have been obvious to one of ordinary skill in this art at the time of invention by appellant as the very nature of the prior art requires synonymous functionalities." Claim 7 was rejected based on "further consideration" of Kay. The Examiner admitted that "Kay does not specifically disclose or describe the method of delivering data wherein the step of routing the request message is based on a PSTN address of the subscriber device and includes the steps of: obtaining a Local

Routing Number if the address has been ported; and routing the request message based upon the Local Routing Number if the address has been ported." The Examiner states that "[t]he motivation to utilize the PSTN routing means is found within Kay ('571) as part of the 'virtually unlimited selection of routing control means', (Kay: col. 18, lines 27-31). (Office Action dated August 11, 2004, p. 5). Appellants agree that the novelty and non-obviousness of dependent claims 3-7 lies mainly with independent claim 1.

Claims 9 and 19, 10 and 20 and 26 and 36 as well as claims 31, 35 and 41 were rejected based on a combination of Kay and Willis et al. The Willis reference was used by the Examiner to overcome numerous deficiencies in Kay including: (1) the lack of disclosure of a method for delivering data wherein transporting the data to the subscriber device occurs regardless of whether the subscriber device is off-hook or on-hook (claims 9 and 19); (2) the lack of disclosure of a method for transporting data wherein the subscriber device does not require subscriber interaction (claims 10 and 20); (3) the lack of disclosure in Kay of a community notification service for broadcasting community notification information to the plurality of subscriber devices (claim 26) or a web server which "pushes" data to a multi-functional server (claim 36); and (4) the lack of a disclosure of multicast, reception triggering connection or Unified Messaging Services (claims 31, 35 and 41). The Examiner finds all of this in Willis stating, *inter alia*, that "the enumerated option of 'push' technology, (Willis: Col. 3, lines 35-45) **implies** that knowledge that the receiver is on-hook or off-hook is obviated" (Office Action dated August 11, 2004, p. 6, emphasis added) and "[t]he motivation to combine the 'push' technology from Willis into the Kay network is found within Kay as an obvious form of information dissemination in consideration of the functionalities and means described therein." (Office Action dated August 11, 2004, p. 6). Appellants disagree. Nowhere in Willis or Kay is there a discussion of sending messages to a user device over the PSTN. As discussed above the Willis and Kay references are not obvious to combine. The discussion of "push" technology in Willis cannot simply be used to hold that the system of the present invention is suggested. Nowhere in Willis are messages "pushed" to a subscriber device over a PSTN.

With regard to claims 15 the Examiner states that "Kay ('571) does not specifically disclose or describe a method for delivering data wherein the step of transporting the data to the subscriber device further includes the step of over-riding vertical services defied [sic] for the terminating node-subscriber device interface based on the data delivery instructions. Kay, however, discloses the use of packet technology, (as noted above), which allows for destination specification." (Office Action dated August 11, 2004, p. 7). The Examiner then refers to modems and Willis, Fig. 3 and Col. 11, lines 14-23 as overcoming this deficiency. Appellants do not understand the applicability of the cited references dealing with packet technology and modems to the subject matter in claim 15.

III. The Examiner has erred in finding claims 27, 30, 45, 47 and 50 would have been obvious to one skilled in the art in view of Kay et al. alone.

With regard to claims 27, 30, 45, 47 and 50, the Examiner noted a deficiency of Kay as not disclosing "the creation of a response message comprising the individual subscriber devices to which the node could not deliver data as the subscriber devices had been ported; and delivery of the plurality of request messages to nodes serving the ported subscriber devices." (Office Action dated August 11, 2004, p. 10). The Examiner stated that "[t]he motivation to incorporate a 'failed' delivery would be necessary, expected and inherent in

such a two-way messaging network system." (Office Action dated August 11, 2004, p. 10). Kay does not teach or suggest the use of a response message that sends a response back to the central service which sent the data and data delivery instructions in those cases where the data could not be delivered to the specified user. Such a response message is not inherent in a two-way messaging network. A two-way messaging network simply implies that messages can be sent in both directions and does not teach or suggest the type of response message claimed in dependent claims 27, 30, 45, 47 and 50 or independent claim 1.

Conclusion

Appellant's inventive method and system contains novel and non-obvious steps and apparatus. There is no suggestion or teaching of appellant's invention as claimed in either the Kay or Willis references either alone or in combination. The references relied upon simply do not in any way teach or suggest appellant's invention. For the reasons set forth above, it is submitted that the Final Rejection of claims 1-7, 9, 10, 12, 15, 17-20, 25-27, 29-31, 35-47, 49 and 50 is in error. Reversal of this rejection is therefore respectfully requested.

The Commissioner is authorized to charge Deposit Account Number 021822 to cover the fee for this Appeal Brief.

Respectfully submitted,

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(viii) Claims Appendix

## CLAIMS ON APPEAL

Claim 1: A method for delivering data from a service application to a subscriber device by means of a Public Switched Telephone Network (PSTN) comprising an originating node and a terminating node, wherein the service application interfaces the PSTN through the originating node and the subscriber device interfaces the PSTN through the terminating node, and wherein the PSTN has no embedded knowledge of the service application, said method comprising the steps of:

creating a request message at the service application wherein the request message comprises the data and data delivery instructions;

transporting the request message from the central server to the PSTN over the originating node-service application interface;

routing the request message from the originating node to the terminating node via a Transaction Capabilities Application Part (TCAP) message;

transporting the data from the terminating node to the subscriber device over the terminating node – subscriber device interface based on the data delivery instructions;

defining a response message at the terminating node wherein the response message comprises status data indicating the status of the delivery of the data to the subscriber device; and

routing the response message from the terminating node to the service application.

Claim 2 : The method of claim 1 wherein the originating node - service application interface is a Simplified Message Desk Interface.

Claim 3 : The method of claim 1 wherein the originating node - service application interface is a Non-call Associated Signaling Integrated Services Digital Network interface.

Claim 4 : The method of claim 1 wherein the terminating node – subscriber device interface is a GR-30-CORE interface.

Claim 5 : The method of claim 1 wherein the terminating node – subscriber device interface is a Non-call Associated Signaling Integrated Services Digital Network interface.

Claim 6 : The method of claim 1 wherein the terminating node – subscriber device interface is a Digital Subscriber Loop interface.

Claim 7 : The method of claim 1 wherein the step of routing the request message is based on a PSTN address of the subscriber device and includes the steps of:

obtaining a Local Routing Number if the address has been ported; and

routing the request message based on the Local Routing Number if the address has been ported.

Claim 9 : The method of claim 1 wherein transporting the data to the subscriber device occurs regardless of whether the subscriber device is off-hook or on-hook.

Claim 10 : The method of claim 1 wherein transporting the data to the subscriber device does not require subscriber interaction.

Claim 12 : The method of claim 1 wherein the PSTN further comprises a packet switch and the service application interfaces the PSTN through the packet switch, wherein the

step of transporting the request message from the service application to the PSTN occurs through the packet switch, and wherein the step of transporting the response message from the PSTN to the service application occurs from the packet switch.

Claim 15 : The method of claim 1 wherein the step of transporting the data to the subscriber device further includes the step of over-riding vertical services defined for the terminating node - subscriber device interface based on the data delivery instructions.

Claim 17 : The method of claim 31 wherein the list of subscriber devices specified in the request message is specified as a range of addresses.

Claim 18 : The method of claim 31 wherein the list of subscriber devices specified in the request message is specified as all numbers within a NPA-NXX available on the node.

Claim 19 : The method of claim 31 wherein transporting the data to each subscriber device occurs regardless of whether the subscriber device is off-hook or on-hook.

Claim 20 : The method of claim 31 wherein transporting the data to each subscriber device does not require subscriber interaction.

Claim 25 : The method of claim 31 wherein the plurality of subscriber devices are served by a plurality of nodes, said method further comprising the steps of:

defining a plurality of request messages at the central server, one request message per node, wherein each request message comprises the data and data delivery instructions whereby the delivery instructions specify to the corresponding node a list of possible subscriber devices served by the node that should receive the data;

routing each request message to its node; and

transporting, at each node, the data to the corresponding list of subscriber devices based on the data delivery instructions.

Claim 26 : The method of claim 25 wherein a community notification service resides on the central server, said method broadcasting community notification information to the plurality of subscriber devices.

Claim 27 : The method of claim 31 further including the steps of:

defining at the node a response message comprising the individual subscriber devices to which the node could not deliver the data because said subscriber devices had been ported;

transporting the response message from the node to the central server;

defining a plurality of request messages at the central server to cover the subscriber devices specified in the response message, wherein each request message comprises the data and data delivery instructions; and

delivering the plurality of request messages to nodes serving the ported subscriber devices.

Claim 29 : A method for delivering data from a central server to a subscriber device by means of a PSTN based node, wherein the central server interfaces the PSTN, and wherein the node has no embedded knowledge of the data, said method comprising the steps of:

defining a request message at the central server wherein the request message comprises the data and data delivery instructions instructing the node on how to deliver the data to the subscriber device;

transporting the request message from the central server to the node without establishing a call; and

delivering the data to the subscriber device based on the data delivery instructions.

Claim 30 : The method of claim 29 further including the steps of:

recording in a response message the status of the delivery of the data to the subscriber; and

transporting the response message to the central server.

Claim 31 : A method for broadcasting data from a central server to a plurality of subscriber devices by means of a PSTN based node, wherein the central server interfaces the PSTN, and wherein the node has no embedded knowledge of the data, said method comprising the steps of:

defining a request message at the central server wherein the request message comprises the data and data delivery instructions, whereby the delivery instructions specify to the node a list of possible subscriber devices served by the node that should receive the data;

routing the request message from the central server to the node without establishing a call; and

delivering the data, based on the delivery instructions, to the list of subscriber devices.

Claim 35 : A method for enhancing Unified Messaging Services wherein a multi-functional server interfaces both a PSTN and an Internet and a subscriber device interfaces the PSTN through a switch, and wherein the multi-functional server receives subscriber messages from the PSTN and Internet, said method comprising the steps of:

defining a request message at the multi-functional server wherein the request message comprises data concerning the subscriber messages received from the PSTN and Internet, and wherein the request message further comprises delivery instructions instructing the switch on how to deliver the data to the subscriber device;

transporting the request message from the multi-functional server to the switch without establishing a call; and

delivering the data to the subscriber device based on the data delivery instructions.

Claim 36 : The method of claim 35 wherein a commercial Web server is interfaced to the Internet, said method further comprising the steps of:

pushing data from the commercial Web servers to the multi-functional server; and

wherein the defined request message comprises the data pushed from the commercial Web Server.

Claim 37 : The method of claim 31 further comprising routing the request message based on a PSTN address of one of the subscriber devices specified in the list of subscriber devices.

Claim 38 : The method of claim 29 wherein a user of the subscriber device establishes a voice-band connection as a result of receiving the data.

Claim 39 : The method of claim 38 wherein the user retrieves information over the voice-band connection.

Claim 40 : The method of claim 29 wherein the subscriber device automatically establishes a connection as a result of receiving the data and retrieves information over the connection.

Claim 41 : The method of claim 35 wherein a user of the subscriber device, as a result of receiving the data, establishes a connection to the multi-functional server and retrieves the PSTN and Internet messages.

Claim 42 : The method of claim 35 wherein the subscriber device, as a result of receiving the data, automatically establishes a connection to the multi-functional server and retrieves the PSTN and Internet messages.

Claim 43 : A method for delivering data from a central server to a wireless device by means of a PSTN based node, a service profiler, and a wireless network, wherein the service profiler is interfaced to both the node and the wireless network, wherein the central server interfaces the PSTN, and wherein the node has no embedded knowledge of the data, said method comprising the steps of:

defining a request message at the central server wherein the request message comprises the data and data delivery instructions;

transporting the request message from the central server to the node without establishing a call;

delivering the data to the service profiler based on the data delivery instructions; and

delivering the data from the service-profiler to the wireless device via the wireless network.

Claim 44 : A PSTN based node that includes a system for delivering data to subscriber devices wherein the system comprises:

means for receiving a request message wherein the request message comprises the data and data delivery instructions; and

means for delivering the data to one or more subscriber devices according to the data delivery instructions and without having knowledge of the data format.

Claim 45 : The node of claim 44 wherein the system further comprises means for creating and transmitting a response message.

Claim 46 : A PSTN based node comprising:

means for receiving data from an application interfacing the PSTN;

means for distinguishing the data as a type comprising service information and implementation information wherein the implementation information describes how to deliver the service information; and

means for transmitting the data over a packet interface if the data is of the type comprising service and implementation information.

Claim 47 : The node of claim 46 wherein the system further comprises means for receiving and transmitting response data.

Claim 49 : A method executed by a service application for sending data through a PSTN, said method comprising:

creating a message wherein the message comprises the data; and

transmitting said message without establishing a call, wherein the service application resides outside the PSTN and wherein the message further comprises customized delivery options for instructing the PSTN on how to deliver the data.

Claim 50: The method of claim 49 further comprising the step of receiving a response message comprising response data.

(ix) Evidence Appendix

None

(x) Related Proceedings Appendix

None